

**Unum Corporation  
Cumberland County  
Portland, Maine  
A-657-71-H-R (SM)**

**Departmental  
Findings of Fact and Order  
Air Emission License**

After review of the air emissions license renewal application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

**I. REGISTRATION**

**A. Introduction**

Unum Corporation (Unum) of Portland, Maine has applied to renew their Air Emission License, permitting the operation of emission sources associated with their insurance office building.

**B. Emissions Equipment**

**Fuel Burning Equipment**

Equipment	Date of Construction	Maximum Capacity (MMBtu/hr)	Fuel Type, %Sulfur	Maximum Firing Rate (scf/hr)	Stack #
HO1-Boiler #2	1994	1.0	Natural Gas	970.9	5
HO2-Boiler #1a	2003	3.5	Natural Gas	3,391	1
HO2-Boiler #1b	2003	3.5	Natural Gas	3,391	1
HO2-Boiler #2a	2002	2.07	Natural Gas	2,009.7	1
HO2-Boiler #2b	2002	2.07	Natural Gas	2,009.7	1
HO2-Boiler #2c	2002	2.07	Natural Gas	2,009.7	1
HO2-Boiler #2d	2002	2.07	Natural Gas	2,009.7	1
HO2-Boiler #2e	2002	2.07	Natural Gas	2,009.7	1
HO2-Boiler #3	1996	1.0	Natural Gas	970.9	1
HO3-Boiler #1	1998	4.5	Natural Gas	4369	6
HO3-Boiler #2	1998	4.47	Natural Gas	4344	7
HO3-Boiler #3	1998	4.47	Natural Gas	4344	7
HO3-Boiler #4	1998	4.47	Natural Gas	4344	7

**Electrical Generation Equipment**

Equipment	Power Output (kW)	Engine Firing Rate (gal/hr)	Maximum Capacity (MMBtu/hr)	Stack #
HO1-Gen #1	365	11.6	1.51	3
HO2-Gen #2	365	19.4	2.52	2
HO3-Gen #3	725	10.1	1.38	8
Generator #4	2000	147.0	20.14	9
Generator #5	2000	147.0	20.14	10

C. Application Classification

The application for Unum does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of current licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 24, 2005). With the fuel limit on the boilers and the operating hours restriction on the generators, the facility is licensed below the major source thresholds and is considered a synthetic minor.

**II. BEST PRACTICAL TREATMENT (BPT)**

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

B. Boilers

The boilers licensed at Unum each have a heat input less than 10.0 MMBtu/hr and are therefore not subject to New Source Performance Standards (NSPS) Subpart Dc.

A summary of BPT for the boilers is detailed below:

1. Use of natural gas.
2. SO<sub>2</sub>, NO<sub>x</sub>, CO and VOC emission data was taken from AP-42 dated 7/98 for boilers having a heat input of 0.5 to 10 MMBtu/hr firing natural gas.
3. PM and PM<sub>10</sub> emission rates for HO2-Boiler #1a HO2-Boiler #1b, and HO2-Boilers #2a through #2e were based upon BPT of 0.05 lb/MMBtu for PM and PM<sub>10</sub>.
4. PM and PM<sub>10</sub> emission rates for HO1-Boiler #2, HO2-Boiler #3, HO3-Boilers #1 through #4 were based upon BPT of 0.12 lb/MMBtu for PM and PM<sub>10</sub>.
5. Visible emissions from each of the stacks serving the boilers shall not exceed an opacity of 10 percent on a six (6) minute block average basis.

C. Back-up Generators

The back-up generators licensed at Unum are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

A summary of the BPT analysis for the back-up generators is the following:

1. Each back-up generator shall only fire diesel fuel with a maximum sulfur content not to exceed 0.05% by weight as documented by fuel receipts.
2. Each back-up generator shall be limited to 500 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.
3. SO<sub>2</sub> emission data was based on fuel sulfur mass balance.
4. PM, PM<sub>10</sub>, NO<sub>x</sub>, CO, and VOC for HO1-Gen #1, HO-Gen#2 and HO-Gen #3 are based on AP-42.
5. PM and PM<sub>10</sub> emission rates for Generator #4 and Generator #5 were based upon BPT of 0.10 #/MMBtu.
6. NO<sub>x</sub>, CO, and VOC emission limits for Gen 4 & 5 are based upon manufacturer "not to exceed" data.
7. Visible emissions from each back-up generator shall each not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.

D. Facility Emissions (used to calculate the annual license fee)

Unum has the following 12 month rolling total annual emissions based on firing no more than:

- 100,000,000 cubic feet of natural gas facility wide.
- 500 hours of operation per year per back-up generator (diesel, 0.05%S).

<u>Pollutant</u>	<u>Natural Gas</u>	<u>HO1 Gen #1</u>	<u>HO2 Gen #2</u>	<u>HO3 Gen #3</u>	<u>Generator #4</u>	<u>Generator #5</u>	<u>Total TPY</u>
PM	6.18	0.12	0.21	0.11	0.50	0.50	<b>7.6</b>
PM <sub>10</sub>	6.18	0.12	0.21	0.11	0.50	0.50	<b>7.6</b>
SO <sub>2</sub>	0.03	0.02	0.03	0.02	0.26	0.26	<b>0.6</b>
NO <sub>x</sub>	5.00	1.75	2.93	1.52	9.72	9.72	<b>30.6</b>
CO	4.20	0.38	0.63	0.33	1.86	1.86	<b>9.3</b>
VOC	0.28	0.14	0.24	0.12	0.18	0.18	<b>1.1</b>

**III. AMBIENT AIR QUALITY ANALYSIS**

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor source shall be determined on a case-by-case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

**ORDER**

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,

- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-657-71-H-R subject to the conditions found in the following conditions:

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

**STANDARD CONDITIONS**

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]

- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
  - A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
    - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
    - 2. pursuant to any other requirement of this license to perform stack testing.
  - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
  - C. submit a written report to the Department within thirty (30) days from date of test completion.[06-096 CMR 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
  - A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
  - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to

the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

- C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 CMR 115]

- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

#### **SPECIFIC CONDITIONS**

- (16) Boilers
- A. Emissions from HO1-Boiler #2 shall not exceed the following [06-096 CMR 115, BPT]:

<u>Pollutant</u>	<u>lb/hr</u>
PM	0.12
PM <sub>10</sub>	0.12
SO <sub>2</sub>	0.01
NO <sub>x</sub>	0.10
CO	0.08
VOC	0.01

- B. Emissions from HO2-Boiler #1a and #1b each shall not exceed the following [06-096 CMR 115, BACT]:

<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>
PM	0.05	0.18
PM <sub>10</sub>	n/a	0.18
SO <sub>2</sub>	n/a	0.01
NO <sub>x</sub>	n/a	0.34
CO	n/a	0.28
VOC	n/a	0.02

- C. Emissions from HO2-Boiler #2a, 2b, 2c, 2d and 2e each shall not exceed the following [06-096 CMR 115, BPT]:

<u>Pollutant</u>	<u>lb/hr</u>
PM	0.10
PM <sub>10</sub>	0.10
SO <sub>2</sub>	0.01
NO <sub>x</sub>	0.20
CO	0.17
VOC	0.01

- D. Emissions from HO2-Boiler #3 shall not exceed the following [06-096 CMR 115, BPT]:

<u>Pollutant</u>	<u>lb/hr</u>
PM	0.12
PM <sub>10</sub>	0.12
SO <sub>2</sub>	0.01
NO <sub>x</sub>	0.10
CO	0.08
VOC	0.01

- E. Emissions from HO3-Boiler #1 shall not exceed the following [06-096 CMR 115, BPT]:

<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>
PM	0.12	0.54
PM <sub>10</sub>	n/a	0.54
SO <sub>2</sub>	n/a	0.01
NO <sub>x</sub>	n/a	0.44
CO	n/a	0.37
VOC	n/a	0.02

- F. Emissions from HO3-Boiler #2, #3 and #4 shall not exceed the following (each) [06-096 CMR 115, BPT]:

<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>
PM	0.10	0.54
PM <sub>10</sub>	n/a	0.54
SO <sub>2</sub>	n/a	0.01
NO <sub>x</sub>	n/a	0.43
CO	n/a	0.36
VOC	n/a	0.02

- G. All licensed boilers at Unum shall fire only natural gas. [06-096 CMR 115, BPT]
- H. Unum shall fire no more than 100,000,000 cubic feet of natural gas facility wide, based on a 12-month rolling total. Compliance shall be based on natural gas receipts from the supplier showing the quantity of fuel supplied. [06-096 CMR 115, BPT]
- I. Visible emissions from each stack serving the licensed boilers at Unum (Stack 1, 4, 5, 6 and 7) shall not exceed an opacity of 10 percent on a six (6) minute block average basis. [06-096 CMR 101, BPT]

(17) Back-up Generators

- A. Emissions from HO1-Gen#1 shall not exceed the following: [06-096 CMR 115, BPT]

<u>Pollutant</u>	<u>lb/hr</u>
PM	0.49
PM <sub>10</sub>	0.49
SO <sub>2</sub>	0.08
NO <sub>x</sub>	7.01
CO	1.51
VOC	0.57

- B. Emissions from HO2-Gen#2 shall not exceed the following: [06-096 CMR 115, BPT]

<u>Pollutant</u>	<u>lb/hr</u>
PM	0.82
PM <sub>10</sub>	0.82
SO <sub>2</sub>	0.14
NO <sub>x</sub>	11.73
CO	2.53
VOC	0.96



- C. Emissions from HO3-Gen#3 shall not exceed the following: [06-096 CMR 115, BPT]

<u>Pollutant</u>	<u>lb/hr</u>
PM	0.43
PM <sub>10</sub>	0.43
SO <sub>2</sub>	0.07
NO <sub>x</sub>	6.09
CO	1.31
VOC	0.50

- D. Emissions from Generator #4 and Generator #5 each shall not exceed the following: [06-096 CMR 115, BPT]

<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>
PM	0.10	2.01
PM <sub>10</sub>	n/a	2.01
SO <sub>2</sub>	n/a	1.04
NO <sub>x</sub>	n/a	38.88
CO	n/a	7.45
VOC	n/a	0.72

- E. HO1-Gen#1, HO2-Gen#2, HO3-Gen#3, Generator #4 and Generator #5 each shall be limited to 500 hours per year of operation, based on a 12 month rolling total. An hour meter shall be maintained and operated on each emergency diesel generator. [06-096 CMR 115, BPT]
- F. The sulfur content of the fuel shall be less than or equal to 0.05% by weight, demonstrated by fuel receipts from the supplier. [06-096 CMR 115, BPT]
- G. A log documenting the dates, times and reasons for operation for each generator shall be kept. [06-096 CMR 115, BPT]
- H. Visible emissions from HO1-Gen#1, HO2-Gen#2 and HO3-Gen#3 each shall not exceed 30% opacity on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period. [06-096 CMR 101]
- I. Visible emissions from Generator #4 and Generator #5 each shall not exceed 20% opacity on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period. [06-096 CMR 101]

(18) **Annual Emission Statement** [06-096 CMR 137]

In accordance with *Emission Statements*, 06-096 CMR 137 (last amended July 6, 2004), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

- 1) A computer program and accompanying instructions supplied by the Department;
- or

- 2) A written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator  
Maine DEP

Bureau of Air Quality  
17 State House Station  
Augusta, ME 04333-0017

Phone: (207) 287-2437

The emission statement must be submitted by July 1 or as otherwise specified in 06-096 CMR 137.

DONE AND DATED IN AUGUSTA, MAINE THIS                      DAY OF                      2007.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_  
DAVID P. LITTELL, COMMISSIONER

**The term of this license shall be five (5) years from the signature date above.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: July 31, 2007

Date of application acceptance: August 10, 2007

Date filed with the Board of Environmental Protection: \_\_\_\_\_

This Order prepared by Mark Roberts, Bureau of Air Quality.